

CHAPTER

VIII BORING

JIGS

Boring jigs are generally used for machining holes where accuracy of alignment and size are particularly essential, and also for holes of large sizes where drilling would be out of the question. Two or more holes in the same line are also, as a rule, finished with the aid of boring jigs. The boring operation is performed by boring bars having inserted cutters of various kinds, and boring jigs are almost always used in connection with this kind of boring tool, although boring operations may be satisfactorily accomplished with three- or four-lipped drills and reamers. The reamers may be made solid, although most frequently shell reamers mounted on a bar and guided by bushings are used. The majority of holes produced in boring jigs, whether drilled or bored out, are required to be of such accuracy that they are reamed out in the last operation.

The boring-bars are usually guided by two bushings, one on each side of the bored hole, and located as close as possible to each end of the hole being bored. The bar is rotated and simultaneously fed through the work, or the work with its jig is fed over the rotating bar. Boring jigs may be used either in regular boring lathes, in horizontal boring and drilling machines, or in radial drills.

The jig body is made either in one solid piece or composed of several members, the same as in drill jigs. The strain on boring jigs is usually heavy, which necessitates a very rigidly designed body with ribbed and braced walls and members, so as to allow the least possible spring. As boring jigs when in operation must be securely fastened to the machine table, means must also be provided in convenient and accessible places for clamping the jig without appreciably springing it.